

**MEGALOCERAEA RECTICORNIS (GEOFFR.), A MIRID NEW TO THE
EASTERN UNITED STATES, WITH THE DESCRIPTION OF A NEW
GENUS OF STENODEMINI**

(HEMIPTERA, MIRIDAE)

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The Palearctic species *Megaloceraea recticornis* (Geoffr) was first reported from North America by Knight (1822), based upon specimens collected by Fracker in Wisconsin. Subsequently Knight (1927, 1941) reported the species from Iowa, British Columbia, Ontario and Idaho. Despite the considerable attention paid to the Miridae of the eastern United States by Knight, Blatchley, Parshley and McAtee among others, *recticornis* has not previously been reported from any of the eastern states.

During the 1954 and 1955 collecting seasons I have found this species to be one of the most abundant grass mirids present in the vicinity of Storrs, Connecticut. It is present in the spring in almost every field and roadside collecting spot. During a collecting trip to the White Mountains, New Hampshire, in 1954 *recticornis* was taken at every collecting station, both in the White Mountains and in southern New Hampshire, even near the summit of Mt. Washington at 6,000 ft.

The United States National Museum possesses specimens taken in New York and Maine from 1947 to 1953. The recent dates of these records, together with the fact that the species was not taken by Parshley in his extensive New England collecting and is not mentioned in the "Hemiptera of Connecticut" or Blatchley (1926), make it evident that *recticornis* has been spreading rapidly through the northeast in very recent years.

In addition to the literature records cited above, the following distributional data are available: CONNECTICUT: Storrs; NEW HAMPSHIRE: Crawford House, Gorham, North Conway, West Ossippee, West Hopkinton, Mt. Monadnock State Park, Mt. Washington at 2000, 3800, 6000 ft.; ILLINOIS: Belvidere (JAS); OREGON: McMinneville (JAS), Beaverton (USNM); WASHINGTON: Clarkston (JAS); MAINE: Monmouth (USNM); NEW YORK: Long Island, Northwest, Riverhead; Mechlenburg (on birdfoot trefoil) (USNM), Selkirk (JAS); IOWA: Ames (HHK, JAS); WISCONSIN: Madison (JAS).

BIOLOGY

Megaloceraea overwinters in the egg stage. In 1955 the first nymphs were taken on May 14th at Storrs and as several of these were in the second instar, the insects had apparently been present for several days. On May 22nd the majority of the nymphs were third instar. The first fifth instar nymph was taken on the 27th of May and the first adults were collected the evening of June 2nd. All adults taken at

the above date were teneral and had obviously very recently emerged. A sample taken by sweeping *Agropyron repens* resulted in the collection of 44 specimens distributed as follows: adults, 1%; instar V, 36%; instar IV, 39%; instar III, 18%; instar II, 5%. On June 14th random sweeping at the same locality showed the following distribution: adults, 54%; instar V, 30%; instar IV, 16%. No adults were taken in mid-July, at which time I was able to collect at the same locality. It seems certain that, as in the case of so many of the Miridae, a single generation is passed through in a year. Butler (1923) reports a single generation in England.

Knight (1922) records the species as probably from green foxtail (*Setaria viridis* (L.) Beauv.), and Blatchley (1926) from foxtail (*Chamaecopsis glauca* L.). In 1927 Knight established breeding on *Panicum* sp. and doubted the earlier records from foxtail. In the Storrs area the species breeds abundantly on *Agropyron repens* (L.) Beauv. As noted above, the New York specimens were taken on birds-foot trefoil. Butler (1923) reports *recticornis* in England from *Brachypodium sylvaticum*, *Lolium perenne* and on flowers of Umbelliferae. While the species appears to have definite host preferences, it seems very doubtful that it is host specific.

IMMATURE STAGES

Butler (1923) describes the egg and briefly compares the nymphs with *Stenodema laevigatus* (L.)

Second Instar.—General coloration as in succeeding instars, terminal half of fourth antennal segment reddish brown; wing pads absent, mesonotal area very slightly rounded in area of prospective pads. *Head*, length 0.50 mm., width across eyes 0.42 mm., interocular space 0.32 mm.; *pronotum*, length 0.25 mm., width 0.50 mm.; length of *abdomen* 1.52 mm.; *antennae*, length I, 0.25 mm.; II, 0.62 mm.; III, 0.90 mm.; IV, 0.72 mm.; *labium*, length I, 0.25 mm.; II, 0.28 mm.; III, 0.25 mm.; IV, 0.30 mm. Total length 2.57 mm.

Third Instar.—General coloration as in fourth and fifth instars, the legs nearly translucent grey. *Head*, length 0.55 mm., width across eyes 0.45 mm., interocular space 0.33 mm.; *pronotum* with anterior and posterior widths nearly equal, lateral margin moderately convex, length 0.28 mm., width 0.50 mm.; *wing pads* evident, strongly divergent, metathoracic pads reaching a very short distance onto the first abdominal tergite, length mesothoracic pads 0.25 mm.; *abdomen*, length 2.03 mm.; *antennae*, length I, 0.42 mm.; II, 1.00 mm.; III, 1.32 mm.; IV, 0.85 mm.; *labium*, length I 0.38 mm.; II, 0.35 mm.; III, 0.35 mm.; IV, 0.38 mm. Total length 2.88 mm.

Fourth Instar.—General coloration and markings as in fifth instar. *Head*, length 0.78 mm., width across eyes 0.58 mm., interocular space 0.40 mm.; *pronotum* less expanded from anterior to posterior margin than in succeeding instar, length 0.50 mm., width 0.73 mm.; *wing pads* strongly divergent, those of mesothorax not completely covering metathoracic pads, extending caudad onto antero-lateral portion of second abdominal tergite, length mesothoracic pads 0.88 mm.; *abdomen*, length 3.55 mm.; *antennae*, length I, 0.70 mm.; II, 1.60 mm.; III, 1.95 mm.; IV,

0.93 mm.; *labium*, length I, 0.53 mm.; II, 0.50 mm.; III, 0.45 mm.; IV, 0.50 mm. Total length 5.58 mm.

Fifth Instar.—General coloration grass green, marked with brownish-testaceous as follows: head adjacent to compound eyes, area of pronotal calli, mesothoracic wing pads, faint longitudinal stripe on thoracic pleura, narrow longitudinal stripes midway between meson and margin; lateral pronotal and wing pad margins, median stripe on pro- and mesothorax, eyes and basal segments of labium white; legs and antennae dull testaceous, apex of labium and terminal half of apical tarsal segment black. Body nearly glabrous, legs and antennae and two terminal abdominal tergites sparsely clothed with short, stiff black setae. *Head*, length 1.00 mm., width across eyes 0.75 mm., interocular space 0.48 mm.; nearly straight above, clypeus strongly declivent, bent at greater than a right angle to longitudinal axis of body; *pronotum* rectangular, lateral margins straight, narrowly carinate, length 0.78 mm., width 1.25 mm.; mesothoracic wing pads long and slender, mesal margin concave, extending caudad to or nearly to fourth abdominal tergite, length 2.10 mm.; *abdomen* elongate, narrowly tapering to apex, dorsal scent gland present between abdominal tergites three and four, tapering to apex, length 5.05 mm.; *antennae* filiform, first segment considerably thicker than succeeding segments, length I, 1.23 mm.; II, 2.55 mm.; III, 2.72 mm.; IV, 1.13 mm.; *labium* extending caudad onto first apparent abdominal sternite, first segment exceeding base of head, length labial segments I, 0.75 mm.; II, 0.63 mm.; III, 0.63 mm.; IV, 0.65 mm. Total length 8.08 mm.

The nymphs closely resemble the grass glumes and are very difficult to detect when motionless. Protective form and color is very evident.

NOMENCLATURE

The question of the correct specific name to apply to this species is a thorny one involving primary homonymy. The species was first described as *Cimex linearis* by Fuessly (1775), but in the same year Fabricius (Syst. Ent., p. 710) described a Chinese alydid (now apparently in the genus *Riptortus*) by the same combination. Dr. J. C. M. Carvalho informs me that the Fabrician name has priority and I therefore adopt here the next available name to conform to Dr. Carvalho's use in his forthcoming Catalogue.

The generic spelling *Megaloceroea* is apparently an unwarranted emendation of *Megaloceraea* (China, 1943).

OTHER SPECIES

North American species from the western United States currently placed in *Megaloceraea* are not congeneric with *recticornis* (Geoff) (the type species), and as no name appears to be available in the literature, it is necessary to erect a new genus for certain of these forms.

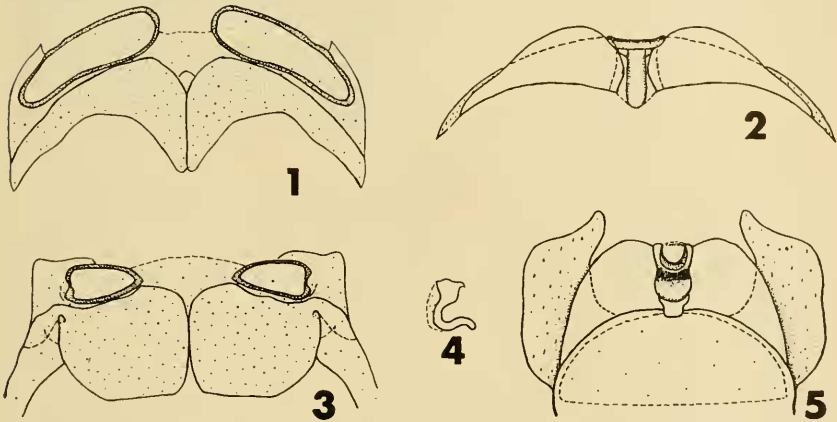
Litomiris, new genus

Head straight, vertex with a longitudinal sulcus, compound eyes nearly touching anterior pronotal margin, antennae long and slender, basal segment bearing short, stiff setae and devoid of long hairs; pronotum strongly punctate, particularly on posterior lobe; scutellum, clavus, and areas on corium usually sparsely

punctate; femora of same thickness throughout; labium extending caudad to metacoxae; body elongate, slender, nearly parallel-sided.

Type species.—*Miris debilis* Uhler, 1872.

Externally *Litomiris* differs from *Megaloceraea* primarily by the punctate pronotum and scutellum. Reuter (1909), in considering *debilis* a true *Megaloceraea*, noted the punctate pronotum, but mentioned the scutellum as completely glabrous and presumably impunctate, whereas it actually does possess scattered hairs and is sparsely and weakly punctate.



Litomiris debilis (Uhler): fig. 1, sclerotized rings of genital chamber; fig. 2, posterior wall of genital chamber. *Megaloceraea recticornis* (Geoff.): fig. 3, sclerotized rings of genital chamber; fig. 4, lateral view of sigmoid process of posterior wall; fig. 5, posterior wall of genital chamber.

In confirmation of the external differences, *Litomiris* and *Megaloceraea* have female genital structures of very different appearance.¹ The posterior wall of the genital chamber (bursa copulatrix) in *recticornis* (Fig. 5) has "E" structures (herein termed the *inter-ramal shelf*) that are very large and expanded flange-like beyond the arch of the inter-ramal sclerites (= A structures), the sigmoid process (B. structure) is complicated, strongly sinuate and concave, and a very large and elliptical "C" structure is present. In *debilis* the posterior wall area (Fig. 2) is very simple, with small inconspicuous inter-ramal shelves, no apparent "C" structure development, and a simple bar-like sigmoid process with a ventral flange. The sclerotized rings of the two are also very different in appearance (Figs. 1 and 3) although this may be a lesser value as a generic criterion.

Litomiris is suggestive of *Porpomiris* Berg (* = *Mesomiris* Reuter), from which it may easily be separated by the much more elongate shape, lack of punctures on the posterior margin of the

¹I have in this paper adopted the terminology of Davis (1955) and have used the letter terminology of Slater (1950) only where other names are not available.

vertex and by the labial length, which reaches caudad only to the mesocoxae in *Porpomiris*.

Of the eight native North American species that have been assigned to *Megaloceraea*, the following are considered at present to belong to *Litomiris*: *debilis* Uhler, *curta* Knight, *rubicunda* Uhler, *punctata* Knight and *gracilis* Van Duzee. *Megaloceraea hirsuta* Knight with an impunctate pronotum, long hairs on the first antennal segment and short labium certainly is not congeneric with either *Litomiris* or *Megaloceraea*; it probably belongs near *Leptopterna*. *Megaloceraea letcheri* Knight has long hairs on the first antennal segment and is strongly punctate on the scutellum, clavus and pronotum. The species is suggestive of *Stenodema*. *Megaloceraea koebeli* Van Duzee is apparently very closely related to *letcheri* Knight.

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